

# Work Order ID 69794

Thursday, May 19, 2011 1:01:56 PM



Page 1

Item ID: D6002-115

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Material

Start Date: 5/19/2011 Start Qty: 30.00



Cust Item ID:

Required Date: 4/12/2012 Req'd Qty: 30.00



Customer:

Reference:

Run Start



Approvals: Process Plan: CL Date: 11/05/19 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D6002

Rev A

100

0.00



PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O 14138 (a) Extrude as per Dwg D6002 (b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube (c) Minimum ultimate tensile strength = 77 ksi (d) Minimum tensile yield strength = 66 ksi (e) Material certification

CL 11/05/19 30

110

0.00



Receive & Inspect for Damage & Mat'l Certs

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

CL 12/04/23 (36)

120

0.00



QC6- Inspect dimensions to drawing

QC

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6002

See input in sheet  
Last Page

(736)

QSP019

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 69794**

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Item ID: D6002-115

Accept



Setup Start



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Stop



Item Name: Crosstube Material

Start Date: 5/19/2011 Start Qty: 30.00



Cust Item ID:

Required Date: 4/12/2012 Req'd Qty: 30.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

N/A

0.00

Hand Finishing

140

Identify as per dwg & Stock Location: mmH 26 0.00

0.00



Packaging

Memo

0.00

Packaging

26 12-5-9

150

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

12/5/10

MF  
12-05-09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Thursday, May 19, 2011 1:01:54 PM

Page 1

Work Order ID: 69794



Parent Item: D6002-115



Parent Item Name: Crosstube Material


Start Date: 5/19/2011

Required Date: 4/12/2012

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP Rev:B 00.12.15 Added: Issue P/O EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6002-115P  Crosstube material		Purchased	No			110	Each	0.0000	1	30		04/12/23	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

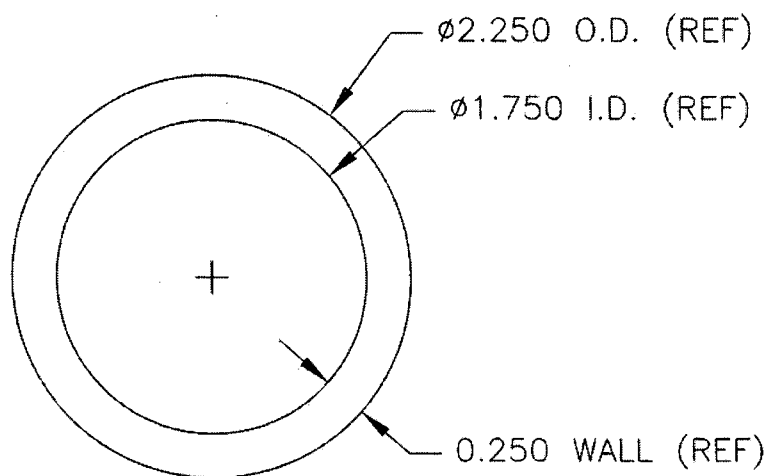
**NOTE:** Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6002	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
00.11.24 *CP*



### NOTES

- 1) D6002-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 115" LONG TUBE: D6002-115

*CL 11/05/19*  
*WID: 69794*

- 2) MATERIAL: 2.250 OD x 0.250 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  
WALL:  $\pm 0.008$  MEAN ( $\pm 0.025$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

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# Abnahmeprüfzeugnis 3.1 - DIN EN 10204:2005

Inspection Certificate 3.1 - DIN EN 10204:2005 / Certificat de Reception 3.1- DIN EN 10204:2005

**Kunde:** Dart Aerospace Ltd.  
**Client:**

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada

**Zeugnisnummer:** 435/12

**Cert No. / No. du certificat:**

**Bestellnummer:** PO14138

**Order No. / No. de commande**

**Auftrag:** 42438/1

**Our Reference/Notre Reference:**

**Produkt:** Rohre nahtlos gepresst

**Product / Produit:** Tubes seamless extruded

**Spezifikation:** AMS - QQ - A - 200/11; Spezifikation Dart Aerospace D6001

**Specification:**

**Werkstoff:**

**Alloy/Alliage:**

7075

**Zustand:**

**Temper/État**

T 6511

**Abmessung**

**Size / Dimension**

2,250 INCH x 1,750 INCH x 0,250 INCH x 115,000 INCH

D6002-115 2.250 X 0.250 X 115

**Kennzeichnung**

**Marking/Marquage:**

Cert.No. 435/12 - ALUnna - 7075 - T6511 - Cast No. 7400 - AMS - QQ - A - 200/11 - 2.250" OD x 0.250" Wall - Heat

Lot No. 1301475 - ALUnna Order Conf. No. 42438/1-1 - P.O. 14138

**Lieferung**

**Delivered Material / Matériel délivré:**

pcs.

lbs

36

670

**Country of Manufacture: Germany**

Products are in accordance with applicable RoHS

Elemente ohne Grenzwerte:

einzel max. 0,05 %, insgesamt 0,15 %

## 1. Chemische Analyse

## Chemical Analysis / analyse chimique

Charge/ min. Cast No. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
	0,40	0,50	1,2	0,30	2,1	0,18	5,1	0,20					
			2,0		2,9	0,28	6,1						
7400/12	0,097	0,189	1,441	0,064	2,465	0,200	5,820	0,041	0,003	0,0321	0,0001	0,0016	0,0001

**Hydrogen content:** 0,10

**ccm/100 g Al** Elements without indication < 0,01 %

**country of melt manufacturer: Germany**

## 2. Mechanische Eigenschaften

## Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat Lot No.
min. max.	77,0	66,0	7,0			
1	82,795	74,820	12,0			1301475

8/10/10

RMS: outside 25 - max. 9,8 µ"

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

**Test results:**

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

**Resultats:**

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

mergardtri



Certified acc. DIN EN ISO 9001:2008 and DIN EN 9100:2003  
valid until 2013-11-10

Cert.- Reg. No.: 001959 QM08; 001959 ASH



ALUnna

M. S. S. S.

04.04.2012

Abnahmebeauftragter

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany





## EXTRUSION INSPECTION SHEET

							<b>ULTRA SONIC MEASUREMENTS</b>				
TUBE #	TOTAL LENGTH	DIA two readings	INSIDE DIA	wall thickness measured w/vern	Strightness at 12"	Rockwell Reading	LOCATION on tube	R1	R2	R3	R4
DWG	115.00"	2.250"	1.750"	0.250"	0.010"	N/A	MIDDLE				
1	115.00"	2.251"/2.251"	1.741"	0.256"/0.251"	0.010"	N/A	57.500"	0.263"	0.255"	0.250"	0.255"
2	115.00"	2.248"/2.248"	1.740"	0.255"/0.249"	0.009"	N/A	57.500"	0.252"	0.255"	0.259"	0.261"
3	115.00"	2.251"/2.250"	1.740"	0.248"/0.258"	0.013"	N/A	57.500"	0.252"	0.257"	0.263"	0.257"
4	115.00"	2.251"/2.251"	1.741"	0.247"/0.257"	0.013"	N/A	57.500"	0.252"	0.255"	0.259"	0.257"
5	115.00"	2.252"/2.250"	1.741"	0.249"/0.256"	0.006"	N/A	57.500"	0.252"	0.260"	0.259"	0.255"
6	115.00"	2.251"/2.254"	1.742"	0.248"/0.254"	0.005"	N/A	57.500"	0.253"	0.252"	0.257"	0.262"
7	115.00"	2.252"/2.251"	1.742"	0.251"/0.258"	0.005"	N/A	57.500"	0.250"	0.258"	0.263"	0.257"
8	115.00"	2.245"/2.248"	1.740"	0.244"/0.256"	0.019"	N/A	57.500"	0.249"	0.252"	0.260"	0.258"
9	115.00"	2.249"/2.249"	1.740"	0.247"/0.257"	0.007"	N/A	57.500"	0.251"	0.253"	0.262"	0.260"
10	115.00"	2.249"/2.247"	1.740"	0.255"/0.251"	0.010"	N/A	57.500"	0.257"	0.250"	0.257"	0.263"
11	115.00"	2.245"/2.246"	1.739"	0.247"/0.248"	0.012"	N/A	57.500"	0.259"	0.263"	0.254"	0.248"
12	115.00"	2.249"/2.250"	1.738"	0.251"/0.256"	0.018"	N/A	57.500"	0.253"	0.261"	0.261"	0.253"
13	115.00"	2.253"/2.253"	1.740"	0.249"/0.256"	0.013"	N/A	57.500"	0.254"	0.253"	0.259"	0.258"
14											
15											
PART # D6002-115		P/O# 14138		BATCH # B69794		Notes:					

REFERENCE ONLY

*5/16/09*

